Classification of Radioactive Waste **APPENDIX 1**
(10 CFR 61.55)

Determination of the classification of radioactive waste (Class A, B, or C) involves two considerations. First, consideration must be given to the concentration of long-lived radionuclides whose potential hazard will persist long after such precautions as institutional controls, improved waste form, and deeper disposal have ceased to be effective. Second, consideration must be given to the concentration of shorter-lived radionuclides for which requirements on institutional controls, waste form, and disposal methods are effective.

I. Classification determined by long-lived radionuclides. If the radioactive waste contains only radionuclides listed in Table 1, classification shall be determined as follows:

1. If the concentration does not exceed 0.1 times the value in Table 1, the waste is Class A.
2. If the concentration exceeds 0.1 times the value in Table 1, but does not exceed the value in Table 1, the waste is Class C.
3. If the concentration exceeds the value in Table 1, the waste is generally not acceptable for land disposal
4. For wastes containing mixtures of radionuclides listed in Table 1, the total concentration shall be determined by the sum of fractions rule described in subsection (g).

Table 1

Radionuclide	Concentration Curies/cu. m.
C-14	8.00
C-14 in activated metal	80.00
Ni-59 in activated metal	220.00
Nb-94 in activated metal	0.20
TC-99	3.00
I-129	0.08
Alpha emitting transuranics w/ half-life>5 years	100.00*
Pu-241	3,500.00*
Cm-242	20,000*

*Note: Units are in nanocuries per gram

Table 2

Radionuclide	Concentration Curies/cubic meter		
	Column 1	Column 2	Column 3
Total of all radionuclides w/ <5 year half-life	700.00	*	*
H-3	40.00	*	*
Co-60	700.00	*	*
Ni-63	3.50	70.00	700.00
Ni-63 in activated metal	35.00	700.00	7000.00
Sr-90	0.04	150.00	7000.00
Cs-137	1.00	44.00	4600.00

*Note: There are no limits established for these radionuclides in Class B or C wastes. These wastes will be Class B unless the concentration of other radionuclides in Table 2 determine the waste to be Class C independent of these radionuclides

II. Classification determined by short-lived radionuclides. If the waste does not contain any of the radionuclides listed in Table 1, classification shall be determined based on the concentrations shown in Table 2. If radioactive waste does not contain any radionuclides listed in either Table 1 or 2, the waste is Class A.

1. If the concentration does not exceed the value in Column 1, the waste is Class A.
2. If the concentration exceeds the value in Column 1, but does not exceed the value in Column 2, the waste is Class B.
3. If the concentration exceeds the value in Column 2, but does not exceed the value in Column 3, the waste is Class C.
4. If the concentration exceeds the value in Column 3, the waste is not generally acceptable for near-surface disposal.
5. For wastes containing a mix of radionuclides listed in Table 2, the total concentration shall be determined by the sum of fractions rule.

III. Classification determined by both long- and short-lived radionuclides. If the radioactive waste contains radionuclides which are listed in both Tables 1 and 2, classification shall be determined as follows:

1. If the concentration of a radionuclide listed in Table 1 is less than 0.1 times the value listed in Table 1, the class shall be determined by the concentration of radionuclides listed in Table 2.
2. If the concentration of a radionuclide listed in Table 1 exceeds 0.1 times the value listed in Table 1, but does not exceed the value in Table 1, the waste shall be Class C, provided the concentration of radionuclides listed in Table 2 does not exceed the value shown in Column 3 of Table 2.